

REMARKS

Claims 145-148 and 154-157 are pending in this application.

Rejections

Claims 145-148 and 154-157 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Examiner asserts that the disclosure as originally filed does not disclose nor teach, “a representation of said object is displayed on said apparatus display, as viewed from above said object, and said representation automatically rotates to orient said representation to coincide with the golfer’s line of sight”. The Examiner has requested that the Applicants point to the portions of the disclosure that support the limitation that the representation of the object automatically rotates to orient the representation to coincide with the golfer’s line of sight to the object.

Applicants respectfully traverse this rejection. Support for the referenced limitation can be found at least at page 40, lines 3-7 (“If the golfer moves to a new location, then ...each point of the green outline should also preferably be rotated based on the new angle of approach to display the green outline as viewed from the golfer’s new position as shown in FIG. 2.”); page 41, lines 3-8 (“Because of the GPS, or other real-time location information being processed on the unit, the unit always “knows” the vector to the selected target or object. The unit can then rotate the graphics on the screen to preferably display the target from the user’s perspective, thus the distances are always relative to the user’s line of sight and are automatically updated as the user’s position physically changes in relation to the target or object area.”); page 41, lines 23 – 28 (“In Step B relating to FIG. 27A, the golfer takes the unit to a golf course, turns it on and selects a hole to begin play. In Step C, the outline of the object could be displayed before a GPS position fix is obtained by either displaying the image oriented due north or with the front of the green or an object at the bottom of the screen. In Step D, when the GPS device obtains a

position fix, the green or object should be redrawn, oriented such that it is displayed as seen from the golfers line of sight to the green or object ...”); and page 43, lines 6-9 (“If the golfer moves to a new location, Step D1a should be performed to compute the change in the user’s angle of approach to the object or target. If the change to a new location is more than a pre-set value, then Step D1b is also performed to redraw the green outline from the golfer’s new angle.”). Fig. 27B illustrates the automatic rotation of the drawn object to coincide with the golfer’s line of sight to the object.

From the foregoing, it can be seen that as the golfer moves about the golf course, a new GPS position fix is automatically obtained and the object is redrawn to be oriented as seen from the golfer’s line of sight to the object. It is respectfully submitted that proper support exists for the “a representation of said object is displayed on said apparatus display, as viewed from above said object, and said representation automatically rotates to orient said representation to coincide with the golfer’s line of sight” limitation.

Claims 145-148 and 154-157 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Barnard (US 6,456,938) in view of Fisher (US 5,507,485).

Applicants respectfully traverse this rejection. Claims 145 and 154 contain the limitation “wherein a representation of said object is displayed on said apparatus display as viewed from above said object, and said representation automatically rotates to orient said representation to coincide with said golfer’s line of sight to said object.” Neither Barnard ‘938 nor Fisher ‘485 disclose or suggest this limitation.

Barnard discloses a display that has a zoom function (col. 24, lines 43-64) and a pan function (col. 25, lines 7-22). Each of these functions requires that a button(s) or a switch be pushed by a user to change the display. The display is not changed automatically. In addition, neither function rotates the representation of an object to orient the representation to coincide with a

golfer's line of sight to the object. The zoom function simply increases or decreases the size of the displayed object. The pan function of Barnard moves the displayed object up, down, left and right (see col. 25, lines 15-22), but does not rotate the object.

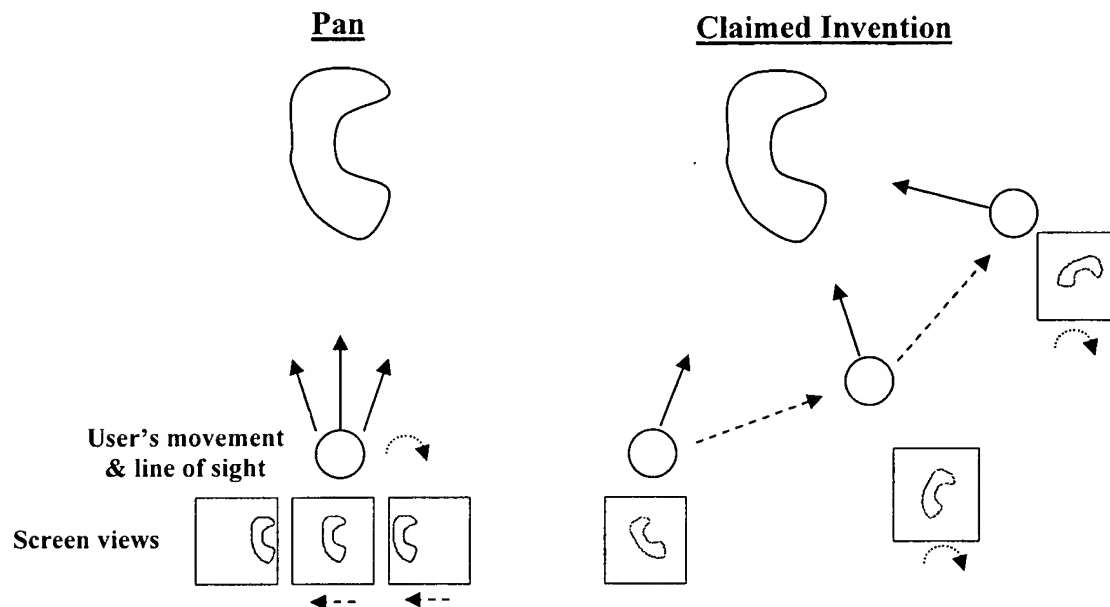
The Examiner concedes that Barnard does not disclose an automatic rotation as claimed. However, the Examiner summarily concludes that the zoom and pan function are functionally equivalent to "a representation of said object is displayed on said apparatus display, as viewed from above the object, and said representation ... rotates to orient said representation to coincide with said golfer's line of sight to said object." As support for this conclusion, the Examiner refers to a Merriam Webster's Collegiate Dictionary definition of "pan":

to rotate (as a motion picture camera) so as to keep an object in the picture or secure a panoramic effect

The Examiner appears to argue that because this definition includes the word, "rotate", the disclosure of a "pan" function in Barnard is equivalent to the "representation ... rotates to orient said representation to coincide with said golfer's line of sight to said object" limitation.

The Examiner's dictionary definition however, refers to rotation "so as to keep an object in the picture or secure a panoramic effect." The rotation referred to in the definition is rotation of a camera, not the rotation of the image, as claimed by the Applicants. The "pan" function involves someone standing at a single point and rotating about that point while aiming a camera outward from that point to "keep an object in the picture or secure a panoramic effect". The object or the picture itself does not rotate. The direction of the line of sight changes as the person rotates. Images in the viewfinder appear to move left to right (or right to left) as the person rotates to pan the camera. This is illustrated below on the left as "Pan". In contrast to this, in the claimed invention, as a golfer moves around an object, the representation of the object rotates. In the claimed invention, the line of sight stays focused on the center of the object being observed (the green, for

example) instead of constantly changing as when a camera is panned. As the golfer moves around the green (like the earth moving around the sun) the physics involved makes the green appear to rotate about its center, unlike panning which causes objects to appear to move left and right. This is illustrated below on the right as “Claimed Invention”.



The dynamics and equations involved in “panning” are based on the simple addition and subtraction of a fixed offset to each of the Cartesian coordinates of the pixels in the displayed image. On the other hand, the dynamics and equations of the claimed invention require more complex angular calculations, the result of which are transformed into Cartesian coordinates. In particular, it can be seen that in the claimed invention the Cartesian coordinates of the pixels of the displayed image are changed by varying amounts in order to display rotation. The amount of variation for each pixel is not fixed and changes based on the distance of the pixel from the axis of rotation. Barnard’s “panning” is substantially different from the claimed invention and is not equivalent thereto.

Furthermore, there is no disclosure or suggestion in Barnard or in Fisher to rotate a representation of an object to “orient said representation to coincide with said golfer’s line of sight to said object.” The claimed invention automatically calculates the amount of rotation necessary so that the representation will be oriented to coincide with a golfer’s line of sight to the object and then redraws the displayed image.

The Examiner asserts that providing an automatic means to replace manual activity involves only routine skill in the art. Without conceding that this is a valid assertion, the so-called manual activity of rotating a representation of an object to “orient said representation to coincide with said golfer’s line of sight to said object” is simply not found or suggested in Barnard or Fisher.

The invention defined by claims 145 and 154 automatically rotates a representation of an object to follow a golfer as she plays. Since the path followed by most players from the tee to the hole is not a direct one, the invention defined by these claims allows the golfer to quickly and easily see the contour of the particular object, such as a green or sand trap, as oriented along her line of sight. In this way it is easier for the golfer to determine the window she must hit or miss. Neither Barnard’s device nor Fisher’s device provides these benefits to a user.

Consequently, it is submitted that claims 145 and 154 define patentable subject matter. Since claims 146-148 depend directly or indirectly from claim 145, and claims 155-157 depend directly or indirectly from claim 154, it is submitted that these claims are allowable for the same reasons that claims 145 and 154 are allowable.

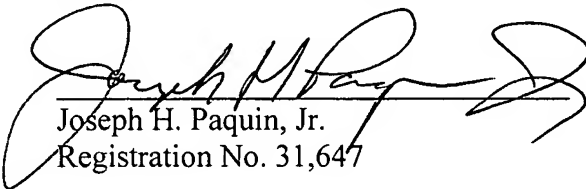
CONCLUSION

In view of the foregoing remarks, Applicants respectfully submit that all of the currently pending claims are in allowable form and that the application is in condition for allowance. Reconsideration and reexamination of the pending claims is requested. If for any reason

the Examiner is unable to allow the application and feels that an interview would be helpful to resolve any remaining issues, the Examiner is respectfully requested to contact the undersigned attorney at (312) 372-2000.

Respectfully submitted,

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